

Relationships and Self Evaluation: An Exploration of Relational Schemas on the Self

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## ABSTRACT

The present research examines the influence of a supraliminal prime of a “significant other” on an individual's self evaluation (including self doubt and self esteem). The general hypothesis is that people primed with a cold rather than a warm other, would show declines in self evaluation. Further, participants high in self doubt were expected to show steeper declines in self evaluation than their low self doubt counterparts. Findings revealed that state self esteem declined with exposure to the cold significant other. Similarly, self doubt was highest when an individual was primed with a cold rather than the warm significant other. These results were discussed in the context of social comparison processes and the impact on self-evaluation.

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Although “real audiences” has been studied in social psychology for decades, the influence of “imagined audiences” has not been explored as extensively (Examples: Baldwin, Higgins, Arkin, Shah, Sorrentino). Like any audience, an “imagined audience” includes any characteristic of that person or group including evaluative tendencies. Therefore, a prime of a relational schema reveals the influence that significant people have on an individual --- even when that person is not present. The current investigation was designed to explore the effects that primes of relational schemas have on overall self esteem, self doubt, and self-appraisals.

In relationships, one’s perception of the other’s thoughts, feelings, dispositions, and actions have a clear impact on one’s own perceptions and behavior. One trait, emotional warmth, has been found to be central in formulating such expectations, shaping evaluations, and generating feelings of acceptance between two individuals, since at least the 1950s (e.g., Kelley, 1950). An individual who is considered “warm” is thought to be supportive, caring, open, and sociable. Comparatively, an individual characterized as “cold” is considered closed-off, rude, and businesslike (e.g., Asch, 1946).

Asch (1946) conducted the first, now classic, research designed to explore the “centrality” of the traits labels warm and cold. He presented participants with a short list of characteristics and asked participants to compose a description of the person. Either the term “warm” or the term “cold” appeared in the middle of the list. The warm-cold dimension was central to the participants’ descriptions. Specifically, Asch found the word grouping containing “cold” received a far more negative characterization than the word grouping containing “warm” --- even though the descriptions differed only one

respect. By contrast, when the terms “polite” and “blunt” were substituted for warm and cold, there was no difference between the two characterizations. In this sense, the dimension “warm-cold” was central and influential while “polite-blunt” was not.

Therefore, first impressions are often based on the perceived warmth of the personality of another. In 1950, Harold Kelley explored first impressions, finding that the terms warm and cold, when applied to a prospective lecturer in a college classroom, had an enormous impact on how the lecturer’s later talk was perceived. Kelley merely provided the class of undergraduate students with a written description of a professor, half receiving a description containing the word “cold” -- the other half receiving a description containing the word “warm”. Then, the professor gave a brief lecture. The students who received the warm description rated the professor highly on personality characteristics such as considerate, informal, sociable, self-assured, and modest. Remarkably, the students who received the cold description, even though they observed the same lecture, rated the professor and talk more negatively than did the warm group. For sixty years, this one classic study has been taken as powerful evidence supporting the power of first impressions. Too, the study is also taken as a support for the idea that there are central personality traits that inspire social evaluations broadly - while other trait labels are pallid, by contrast.

*Domains of the Self.* The specific hypothesis explored in the current study originated with Higgins (1987), now also-classic, characterization of three chief domains of the self. The first is the *actual self* (which refers to what and who an individual considers him- or her- self to be at present). Next, the *ideal self* is relevant (which refers to who and what the individual wants or aspires to be). Finally, Higgins termed

the third domain the *ought* self (noting that individuals also consider what they should or ought to try to be, analogous to the notion of the “conscience”). The chief distinction between the ideal and the ought self reflects the motivational source of the “aspect of the self”. The ideal self is motivated by the goals and aspirations of the individual. The ought self is said to be driven instead by morals and values, largely introjected from one’s society or from particularly significant others in one’s life.

Higgins’ (1987) theorizing anticipated a different pattern of emotional life depending on the discrepancy between an individual’s actual self and either his or her ideal self or ought self. According to Higgins (1987), agitation is the primary result of discrepancies between the actual and the ought self; sadness is the chief emotional consequence of a discrepancy between the actual self and ideal self. In this simple, elegant way, Higgins was able to distinguish the antecedents of the two “common colds of mental health”, anxiety and depression.

In a somewhat more complex version of Higgins’ theory, he introduces the idea that both internal and external factors influence the formulation of both ideal and ought selves. Internal factors are construed as those arising within the individual him or herself, such as feelings of self esteem, abilities, and emotion. External factors arise in the environment and rather than oneself including societal expectations and norms. In his research, Higgins (e.g., 1987) has found time and again that discrepancies between an individual’s ought self and actual self or an individual’s ideal self and actual self - including significant others’ vision of what the individual’s ought or ideally could be - routinely creates conflict and emotion.

*Significant Others' Impact.* The influence of significant others on an individual's psychological state enjoys a longstanding tradition and has been a topic in a huge range of research domains. To illustrate, Shah (2003) added to the notion that significant others affect an individual by showing that other people can serve as inspirations for one's setting standards for the self. These standards have the capacity to motivate or to inhibit the individual. Specifically, Shah (2003) found that priming an individual with the name of a significant other had a clear influence on the individual's goals and the pursuit of those goals. He also showed that significant others influence one's perception of a goal's difficulty, the value one places upon a goal and, the emotional reaction one has to various performance outcomes. These findings suggest that individuals transfer perceived goal appraisals held by significant others into their own goal appraisals – consistent with the term “introjection” which has been used for decades to describe how social forces are incorporated into one's personal psychology, and then will serve as guides toward one's actions. This effect appears to be automatic in the sense that subliminal primes of significant others show the very same impact as supraliminal primes (Shah, 2003). The process is not necessarily in one's awareness.

Significant others not only can affect an individual's goals but can also have an effect on individual's self-evaluation. Self evaluation is the process in which a person rates the quality of his or her own work compared to some reference point such as another individual (Sorrentino and Higgins, 1986, pgs. 23-34). According to Baldwin (1994), an individual's evaluation of the self is based on his or her significant others' evaluations of the individual. In his study, Baldwin found that priming a participant with an individual, who the participant had previously defined as a “critical” (i.e. faultfinding)

person in his or her life, caused the participant to have negative self evaluations. He used subliminal priming to show that a person can internalize relationships so that the opinions of the significant other have an effect on the person's thoughts, views, and actions even when the significant other is no longer present. This remarkable finding suggests that the self is somewhat consistent across contexts, but partially because the significant others one keeps in one's awareness are themselves consistent. To the extent that one's significant others would shift from context to context, so too would self-evaluation tend to follow. Thus, despite superficial contextual differences, these findings suggest that momentary self-evaluation can change in lock step with changes in the shifting source of evaluative other primes.

Recently, Reich and Arkin (2006) explored relational schemas and the effects of two different implicit theories of intelligence on an individual. Relational schemas are cognitive structures that symbolize typical patterns for interpersonal relationships which develop through a process of internalization of these relationships over time. They defined two different theories of intelligence. Incremental theory is the belief that an individual's characteristics can grow and improve. Comparatively, entity theory is the idea that an individual's characteristics are bound (perhaps genetically, but fixed, regardless). The researchers hypothesized that people who would be considered cold would utilize entity theory and view other people as incapable of improvement creating self doubt in other people by being unsupportive of attempts to improve. In contrast, the researchers hypothesized that people who would be considered warm would have a tendency toward incremental thought, in turn lessening self doubt in other people through encouragement.



Reich and Arkin (2006) concluded that the expectations of the audience transfers to the individual (as in introjection). For example, if the people around an individual endorse incremental theory, then the individual will adapt his or her thoughts to be incremental as well. In this study, the effect of the evaluators' support of particular implicit theories of intelligence on an individual's level of self doubt was dependent on the participants' expectations of his or her performance and audience expectations. Participants with an entity evaluator had greater self-doubt than participants with an incremental evaluator when they expected to perform poorly on a task because the evaluator viewed their abilities as poor and unable to be changed. However, participants with an entity evaluator felt less self-doubt than participants with an incremental evaluator when they expected to perform very well because the evaluator would view their abilities positively. These findings also showed that enhanced self doubt evoked by the expectations of significant others predicts declines in a participants belief in his or her personal abilities and competence.

## OVERVIEW OF CURRENT RESEARCH

The following study was designed to explore and perhaps establish a causal relationship between cold and warm significant others and an individual's self evaluation. The purpose of this study is to show how significant others can affect individuals based on the level of warmth exhibited in the relationship. The current research focuses on the effect significant others have on both global and state traits (i.e. self esteem, self doubt, and self evaluation). By doing so, the knowledge of interpersonal relationships and, more particularly, awareness of the impact of interpersonal relationships on feelings of self-doubt and self esteem will increase. The

internalization of the relationships will be confirmed by priming participants with significant others. Priming will show that simply reminding an individual of a relationship can invoke cognitions that are representative of the relationship.

Overall, the investigators expected participants primed with a cold target to report lower ratings of various characteristics relative to those primed with a warm target, replicating what has been found now for decades. We propose that participants who have high self doubt will show lower self ratings than those with low self doubt, regardless of which prime the participant receives. Presumably, individuals with high self doubt will be less confident in their abilities and therefore, will rate themselves lower than individuals with high self doubt. Further, it was anticipated that there would be significant differences between the results for the participants exposed to a warm prime and the participants exposed to the cold prime and that this would be especially true among the individuals with high levels of chronic self-doubt. This hypothesis is based on the idea that warm people create feelings of support and care, which are believed to decrease feelings of self doubt. In contrast, it is believed that cold people tend to be judgmental and distant, increasing feelings of self doubt.

## METHOD

*Subjects.* 105 undergraduate students (male = 42, female = 62, not specified = 1) enrolled in an introductory psychology course at The Ohio State University participated in this study in exchange for class credit. Students had the opportunity to choose from several different research studies, and those who did not wish to participate in the research had alternative participation opportunities for equal class

credit. Participants ranged in age from 18 years to 32 years with a mean age of 19.48 years.

*Procedure.* Participants were welcomed to the lab in groups from four to eight. The experimenter followed a script at all times in an attempt to minimize or eliminate experimenter bias. Each participant was treated the same by the experimenter throughout the study, with the single exception of the experimental manipulation. After completing the consent form, participants individually completed the experiment at computers stationed on individual desks. Participants were seated, two participants in each room. The instructions for the remainder of the experiment were conveyed on the computer using conventionally available MediaLab v2008 research software (Empirisoft).

Participants began by completing a modified version of the Self Attributes Questionnaire (Pelham & Swann, 1989; See Appendix D). Nine characteristics, each rated on a Likert-type scale, with anchors 1 (not at all) and 10 (very much): Intellectual/academic ability, social skills/social competence, artistic and/or musical ability, athletic ability, leadership ability, common sense, emotional stability, sense of humor, and discipline. Using the Likert-type scale, the participants were asked to make five different judgments on the aforementioned characteristics. First, the participants were asked to compare him or herself on the various traits relative to the average college student. Then, the participants were asked to rate the certainty the participant had of his or her rating him or herself relative to the average college student. Next, participants rated the importance of various characteristics, and then they rated how important the participant believed the different characteristics are to other people.

Finally, the participants rated themselves on the characteristics in comparison to each participant's vision of the ideal individual.

In the second phase of the study, participants were asked to provide the names and the relationship to the participants of people who matched five different descriptions. First, the participants were asked to name an individual that he or she considered cold and critical. Then, the participants were asked to name an individual who was warm and accepting. The conceptual definitions of warm and cold have been adapted from Asch (1946) and Kelley (1950). These two questions were followed by questions that asked the participants to name individuals who met three other criteria: a famous person, someone he or she currently lives near, and someone he or she met recently. This procedure was borrowed from Baldwin's study of relational schemas (1994).

In order to decrease the participants' awareness of the previous descriptions, the participants completed a "filler" task. During this task, the participants were instructed to answer questions that ranged in difficulty level from easy to moderately difficult questions from a practice Graduate Record Exam (GRE) (Barron's 2008). This part of the procedure was adapted from Shah (2003). In his research, Shah (2003) used an undefined "filler questionnaire" in order to "further lessen the salience of the name and expectancy rating participants had provided initially" (p.427).

Next, the priming manipulation occurred. Each participant was instructed to focus on a black screen during which time a prime flashed on the screen. The participants were presented with the prime for 16 milliseconds, following Baldwin's (1996) procedure. The prime depended on one of three conditions. In the "cold"

condition, the participant was presented with the name the participant entered into the computer system when asked for a cold and critical individual. In the “warm” condition the participant was presented with the name the participant entered into the computer system when asked for a warm and accepting person. In the control condition, participants were presented with a random string of letters with no emotional connotation (e.g. qwedgfsxcrt).

Next, the participants were asked to complete several surveys. The participants repeated the Self Attributes Questionnaire (see earlier description). Then, the participants completed the State Self Esteem Scale (Heatherton & Polivy, 1991), the Self-Doubt Subscale of the Subjective Overachievement Scale (Oleson et al., 2000), the Self Concept Clarity Scale (Campbell, Trapnell, Heine, Katz, Lavalley, & Lehman, 1996), and the Implicit Theories of Intelligence Questionnaire (Dweck, 1988). Finally, participants completed a brief questionnaire including basic demographic information such as age, gender, and race.

At this time, the computer prompted the participants to notify the experimenter that the study was complete. The experimenter then debriefed each participant, individually. All participants were given course credit regardless of completion of the experiment.

## RESULTS

**Self Doubt Subscale:** The Self Doubt Subscale of the Subjective Overachievement Scale (SOS-SD) was used in this study as a dependent measure, with an eye toward exploring whether the manipulation of cold vs. warm primes had an impact on a measure that is, ordinarily, construed as a chronic index of self-doubt. The

data were analyzed, and the specific analysis was a univariate ANOVA. Self-doubt scores were significantly higher in the Cold condition ( $M=3.806$ ) than in the Warm condition ( $M = 3.483$ ),  $F(2, 102) = 4.448$ ,  $p = 0.037$ ,  $d = 3.009$ , and also significantly higher than the Control condition ( $M = 3.457$ ),  $F(2, 102) = 4.516$ ,  $p = 0.036$ ,  $d = 2.973$ . The warm and control conditions did not differ,  $p > .05$ .

**Self Attributes Questionnaire:** The Self Attributes Questionnaire (SAQ) was administered before and after the prime. Consequently, change scores between the participants' responses before the prime was administered and the participants' responses after the prime was administered were calculated for all nine traits in all five domains (i.e., relative to other college students; certainty of rating; importance of each domain to the participant; importance of each domain to other people; and relative to the participant's ideal) by subtracting the pre prime answers from the post prime answers for each trait-domain pair individually. In total, therefore, forty five new variables were computed and a univariate ANOVA was conducted on each new variable (i.e., intellect relative to other college students; certainty of intellectual rank; etc.) once again using SPSS.

Significant effects in self ratings compared to other college students and compared to the ideal self emerged on two characteristics. Self rating on social skills/social competence compared to other college students decreased,  $F(2, 102) = 4.248$ ,  $p = 0.042$ ,  $d = 2.948$ , for those primed with a warm individual when compared to those primed with a cold individual. Self rating on leadership ability compared to the ideal individual decreased,  $F(2, 102) = 5.166$ ,  $p = 0.025$ ,  $d = 3.255$ , for those primed with a cold individual when compared to those primed with a warm individual.

Significant effects also emerged for the participants' certainty of his or her standing relative to other undergraduate students for three different traits: social skills/social competence, athletic ability, and emotional stability. Certainty of social skills/social competence increased,  $F(2, 102) = 3.625, p = 0.060, d = 2.660$ , for those primed with a cold individual when compared to the control group. Certainty of athletic ability increased,  $F(2, 102) = 4.113, p = 0.045, d = 2.880$ , for those primed with a warm individual when compared to the control group. Certainty of emotional stability decreased,  $F(2, 102) = 4.125, p = 0.045, d = 2.881$ , for those primed with a warm individual when compared to the control group. The importance of athletic ability to the participant decreased,  $F(2, 102) = 5.803, p = 0.018, d = 3.419$ , for those primed with a warm individual when compared to the control group. The importance of social skills to other people increased,  $F(2, 102) = 3.371, p = 0.046, d = 2.823$ , for those primed with a cold individual when compared to the control group. The balance of the variables from the Self Attributes Questionnaire yielded nonsignificant results.

**State Self-Esteem:** Once appropriate items were reverse-scored, an average score was computed for each subscale (performance, social, and appearance) of the State Self Esteem Scale (SSES) (Heatherton and Polivy, 1991). Then, a univariate ANOVA was conducted on the average score for the entire SSES and each respective subscale. The overall SSES score showed differences,  $F(2, 102) = 4.076, p = 0.046, d = 2.826$ , between the control group and those primed with a cold individual. On average, the cold condition had SSES scores that were significantly lower than the control condition. The overall SSES score also showed significant differences,  $F(2, 102) = 5.022, p = 0.027, d = 3.218$ , between those primed with a cold individual and

those primed with a warm individual. On average, those primed with a cold individual had SSES scores that were significantly lower than those primed with a warm individual.

Significant differences between groups were also found for each subscale of the SSES. Individuals primed with warm individuals had an average SSES performance subscale score that was significantly greater than those primed with a cold individual,  $F(2, 102) = 4.044, p = 0.047, d = 2.877$ . Participants primed with a warm individual had an average SSES appearance subscale score that was significantly greater than participants primed with a cold individual,  $F(2, 102) = 4.507, p = 0.036, d = 3.042$ . Participants primed with a cold individual had an average SSES social subscale score that was significantly less than individuals in the control group,  $F(2, 102) = 4.076, p = 0.046, d = 2.827$ .

A univariate ANOVA was then conducted on each subscale of the SSES while controlling for the affect of certainty of emotional stability. Certainty of emotional stability was found to act as a mediator in the effect that condition had on overall self esteem,  $F(3, 101) = 3.561, p = 0.017$ . Certainty of emotional stability was also found to act as a mediator in the effect that condition had on the appearance self esteem subscale,  $F(3, 101) = 2.921, p = .038$ . A univariate ANOVA was also conducted on each subscale of the SESS while controlling for the effect of certainty of athletic ability. Certainty of athletic ability was found to act as a mediator in the effect that condition had on overall self esteem,  $F(3, 101) = 2.886, p = .039$ . Certainty of athletic ability was also found to act as a mediator in the effect that condition had on the social self esteem subscale,  $F(3, 101) = 2.687, p = .050$ .



**Self-Concept Clarity and Implicit Theories of Intelligence:** The Self Concept Clarity Scale and the Implicit Theories of Intelligence Questionnaire were analyzed using univariate ANOVA. Neither scale revealed any significant differences.

## DISCUSSION

Overall, the current research shows that warm and cold significant others can significantly affect both trait measures (i.e. self certainty and self doubt) and state measures (i.e. state self esteem). The current research also shows the important connections between specific traits, certainty of ability, and self esteem. The findings show that participants were negatively impacted by cold significant others, particularly in the performance and appearance domains. Participants in the cold condition had significantly higher self doubt and had significantly lower state self esteem than in both the control and the warm conditions. Participants in the cold condition also had lower state self esteem scores than those in the warm condition on both the performance and the appearance subscales of the State Self Esteem Scale (Heatherton and Polivy, 1991). Participants in the cold condition also responded with less certainty than participants in the warm condition on performance variables such as athletic ability and leadership.

Although the data shows a causal relationship between condition and self esteem, the data also shows that there is an indirect causal path between the cold prime and self esteem. Participants' certainty in their emotional stability and athletic ability mediated the effect of condition on self-esteem. Specifically, results indicated that cold (vs. warm or neutral) primes lowered participants' certainty in their emotional stability which, in turn, lowered their overall self esteem; similarly, the cold prime

lowered participants' certainty in their athletic ability which, in turn lowered their social self esteem. The mediation findings extend prior work on reflected appraisal processes (Felson, 1980; Kinch, 1963; Mead, 1934; Cooley, 1902) to suggest that uncertainty in specific self-views (emotional stability and athletic ability) play a critical role in mediating the effect of others' appraisals on self-appraisals.

Throughout the study, the responses of the warm condition tended to coincide with the responses of the control condition, suggesting the warm prime had little or no effect on the participants. The few areas in which the warm condition tended to differ from the control condition included areas of social skill abilities such as social competence and emotional stability. Since warm individuals, by definition, are perceived as socially competent, participants primed with a warm individual tend to respond with lower confidence in social skill abilities. This may reflect the participants' comparison of themselves to the warm primes, and a resulting contrast effect of the warmth of the prime. For example, if a participant is comparing him or herself to a warm prime, then the participant may rate him or herself lower in social competence. This rating may be a reflection of his or her social competence relative to the prime rather than relative to the average person.

These findings are consistent with the overall results of Baldwin's (1994) study. The "critical" prime and the "noncritical" prime of Baldwin's study conceptually coincide with the "cold" prime and the "warm" prime of the current study, respectively. "Cold" and "warm" are broader characteristics that include criticalness while also including traits such as humor and generosity (Asch, 1946). Both the Baldwin study and the current study show that state self esteem is lower for individuals who are primed with a cold or

critical person. The differences between the results of Baldwin's study and the results of the current study are in the subscales of the State Self Esteem Scale (Heatherton and Polivy, 1991), namely the social state self esteem subscale. Baldwin found that people primed with a critical person only had significantly lower social state self esteem when compared to people primed with a noncritical person. Conversely, the current study showed that the participants primed with a cold individual had significantly lower scores than individuals primed with a warm person on the appearance and the performance subscales as well.

Rather than focusing on the criticalness of an individual, the warm-cold dimension provides a wider range of characteristics such as humor, kindness, and sociability. This broader dimension may influence people to express more dramatic changes in cognitive patterns, in turn, having a larger effect on self esteem, self doubt, and self evaluation which may explain the disparities between the current research and Baldwin's (1994) study.

Also, because of the broader dimension, participants may be more likely to compare themselves to the warm primes because they were prompted to evaluate more characteristics when selecting primes. By having more positive traits in mind, the participants in the current study may have chosen warm primes who have the positive social characteristics that the participants value most in a personal sense. Thus, the warm primes are more likely to be used by the participant as a reference point for judgments of social competence and ability.

There are three ways in which the research conducted by Baldwin (1994) was different than the methods used in the present research. These serve as possible

explanations for the discrepancies in the findings. First, unlike the current study, Baldwin used prime masking by flashing a row of capital Xs over the prime as well as flashing the row of capital X's prior to when the prime was presented. By masking the prime, Baldwin's participants may have been less aware of the manipulation than the participants in the current study. Thus, the prime may have had exclusively non-conscious effects on Baldwin's participants. In the current study, the participants may have had increased awareness of the manipulation so the participants may have engaged in social comparison with the primes, comparing their own abilities and characteristics with those of the primes rather than "other people" in general or the ideal individual. As mentioned above, individuals who are defined as "warm" may make the participant feel as if he or she is not as socially capable because the participant is comparing himself or herself to an individual who is viewed as extremely socially skilled.

Second, Baldwin included a performance task that may have been less difficult than the GRE questions included in this study. The use of GRE questions may have negatively affected the participants in an unexpected way. By completing a task viewed as difficult, a participant may feel more negatively about his or her performance abilities. This negative feeling may have been increased by the presence of the cold prime leading to differential results between the warm and the cold conditions. Thus, the current results showing how individuals primed with a cold significant other have lower SSES performance scores could possibly be representing effects of the combination of the GRE questions coupled with the prime manipulation, and not merely the prime manipulation alone.

Finally, the collection of each of the participants' primes differed between the two studies, and this may have induced a comparison effect. Baldwin asked the participants to provide the names of various significant others as part of a series of other basic questions, such as age and favorite color, before administering the research questionnaires. Baldwin's research did not require the participants to directly compare themselves to others or make direct judgments about their characteristics at any point throughout the study. However, the current study included the Self Attributes Questionnaire which specifically asks the participants to make direct judgments on specific characteristics and compare themselves to other individuals. Thus, the current research may have primed people to think in comparative terms. By doing so, participant responses may have been affected by this comparison as well as by the warm-cold manipulation rather than the manipulation alone. On a related note, participant awareness of the prime was never confirmed in the debriefing. Questioning the participants about their experience may be useful in future studies to reveal individual perception of the prime.

Although there were certainly some methodological limitations in this research, the methodology of the current study may actually have been advantageous by making the experiment more ecologically valid. By creating a comparison effect between the participants and the prime, the study more closely simulated real life interaction. When individuals make judgments, people tend to refer to a reference point as a comparison for these judgments (Sorrentino and Higgins, 1986, pgs. 23-34). In this research, the participant may have been provided with a concrete source of comparison rather than being left to draw from influences outside of experimental control. By controlling the

source of comparison, this investigation may have eliminated possible confounding variables.

This study shows that warm and cold significant others can affect individuals in meaningful ways. These relationships can affect both trait measures (i.e. self certainty and self doubt) and state measures (i.e. state self esteem). Specifically, these relationships affect how positively a person feels about themselves overall as well as how certain an individual is of his or her standing in comparison to other people. This study also shows the important connections between specific traits, certainty of ability, and self esteem. Thus showing if one is not certain of his/her abilities, he/she may have lower self esteem. These findings are important to the field of psychology by broadening what is known about the strength of the impact of significant others on individuals' self evaluation. Further research should retest the effects of warm and cold primes on participants self doubt, self esteem, and personal belief of self attributes by repeating the current study. Also, further research should compare the results of conducting this procedure with prime masking and without prime masking to test the importance of a subliminal prime.

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## APPENDICES INDEX

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Appendix E – Self Doubt Subscale of the Subjective Overachievement Scale

Appendix F – State Self Esteem Scale

Appendix G – Self Concept Clarity Scale

Appendix H – Implicit Theories of Intelligence Questionnaire

## APPENDIX A

*Table 1.**The Subjective Overachievement Scale – Self Doubt Subscale*

	<i>Mean</i>	<i>Comparison Condition</i>	<i>Mean</i>	<i>F-ratio</i>	<i>P-value</i>	<i>Effect Size (d)</i>
<i>Cold</i>	3.806	Control	3.457	4.516	0.036	2.973
		Warm	3.483	4.448	0.037	3.009

*Note:* The f-ratio, p-value, and effect size represent the statistical values for the difference between the scores for the cold condition and the control condition and the warm condition.

Table 2.

*Self Attributes Questionnaire*

	<i>Condition</i>	<i>Mean</i>	<i>Comparison Condition</i>	<i>Mean</i>	<i>F-ratio</i>	<i>P-value</i>	<i>Effect Size (d)</i>
<i>Social Ability Compared to Others</i>	Cold	.448	Warm	-.182	4.248	0.042	2.948
<i>Leadership Ability Compared to Ideal</i>	Cold	-.586	Warm	.205	5.166	0.025	3.255
<i>Certainty of Social Ability Compared to Others</i>	Cold	.379	Control	-.469	3.625	0.060	2.660
<i>Certainty of Athletic Ability Compared to Others</i>	Warm	.614	Control	-.125	4.113	0.045	2.880
<i>Certainty of Emotional Stability Compared to Others</i>	Warm	-.432	Control	.375	4.125	0.045	2.881
<i>Importance of Athletic Ability to the Participant</i>	Warm	.114	Control	.875	5.803	0.018	3.419
<i>Importance of Social Ability to Others</i>	Cold	.241	Control	-.406	3.371	0.046	2.823

*Note:* For each row, the statistics represent the difference between the condition column and the comparison condition column.

Table 3.

*State Self Esteem Scale*

	<i>Mean</i>	<i>Comparison Condition</i>	<i>Mean</i>	<i>F-ratio</i>	<i>P-value</i>	<i>Effect Size (d)</i>
<i>Cold</i>	3.0443	Control	3.433	4.076	0.046	2.826
		Warm	3.447	5.022	0.027	3.218

*Note:* The f-ratio, p-value, and effect size represent the statistical values for the difference between the scores for the cold condition and the control condition and the difference between the scores for the cold condition and the warm condition.

*Table 4.**State Self Esteem Scale-Subscales*

	<i>Condition</i>	<i>Mean</i>	<i>Comparison Condition</i>	<i>Mean</i>	<i>F-ratio</i>	<i>P- value</i>	<i>Effect Size (d)</i>
<i>Performance</i>	Cold	3.261	Warm	3.637	4.044	0.047	2.877
<i>Appearance</i>	Cold	3.000	Warm	3.470	4.507	0.036	3.042
<i>Social</i>	Cold	2.872	Control	3.344	4.076	0.046	2.827

*Note:* For each row, the statistics represent the difference between the condition column and the comparison condition column.

## APPENDIX B

## Figure Captions

*Figure 1.* The cold condition had significantly higher self doubt than those individuals in the warm group and the control condition.

*Figure 2.* The cold condition had significantly lower state self esteem than both the warm and the cold condition.

*Figure 3.* The warm group had significantly higher performance state self esteem than the cold group. The control group had significantly higher social state self esteem than the cold group. The cold group had significantly lower appearance state self esteem than the warm group.

## APPENDIX C

Figure 1.

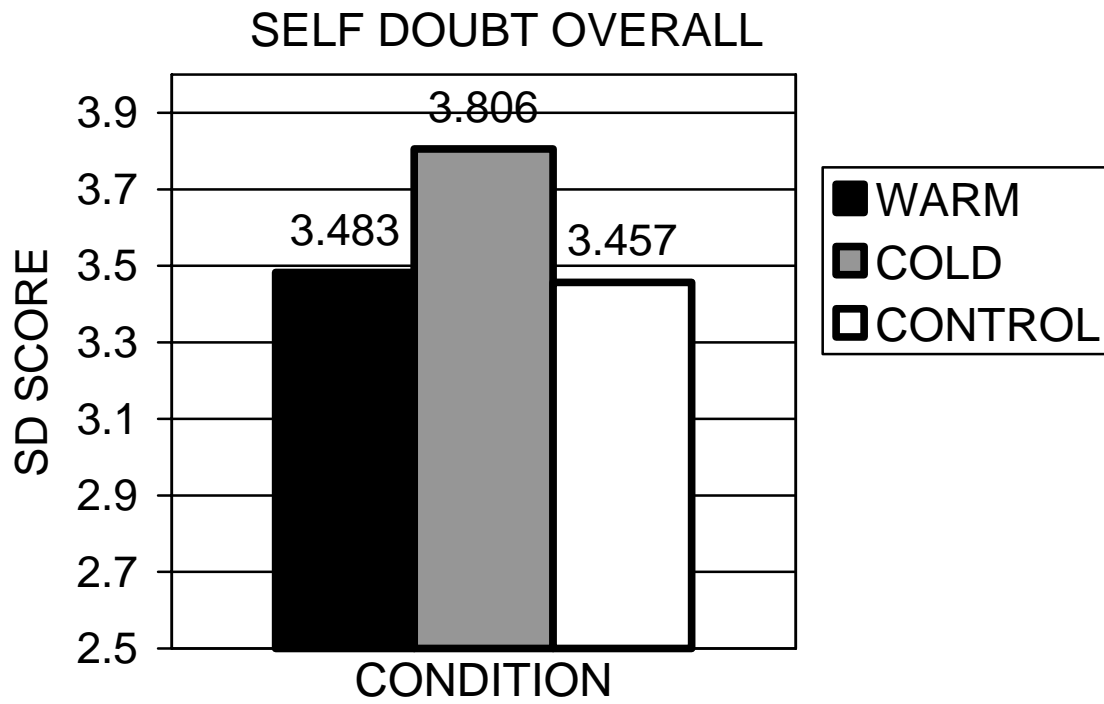


Figure 2.

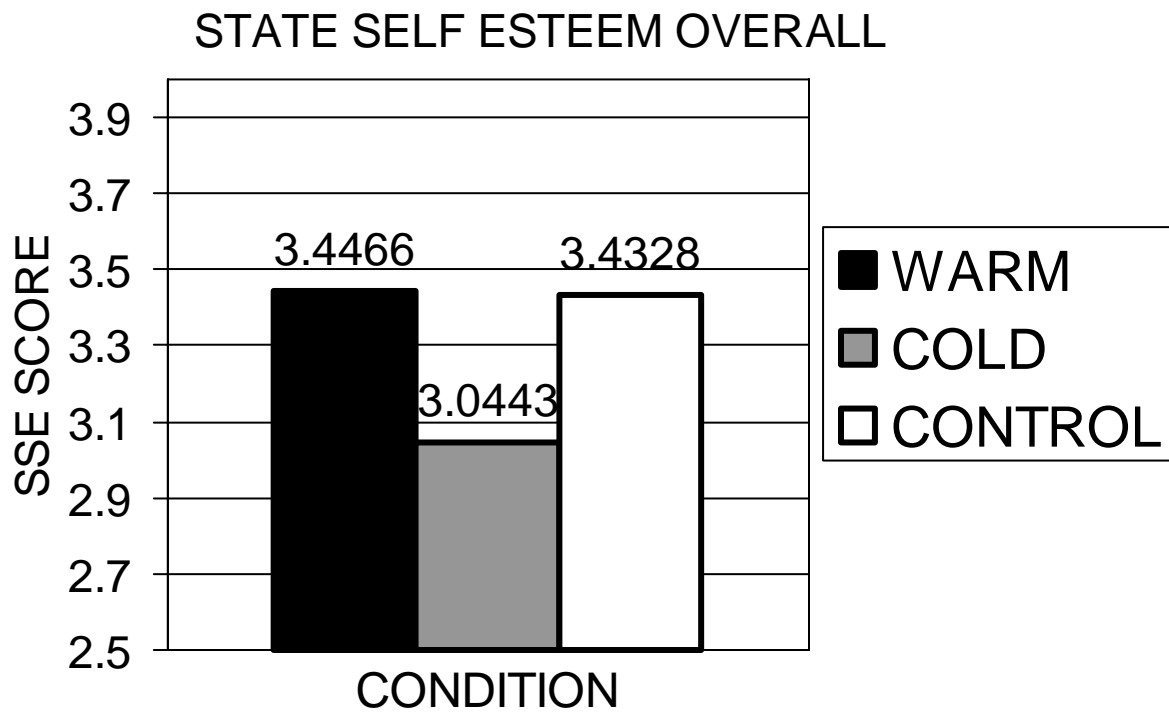
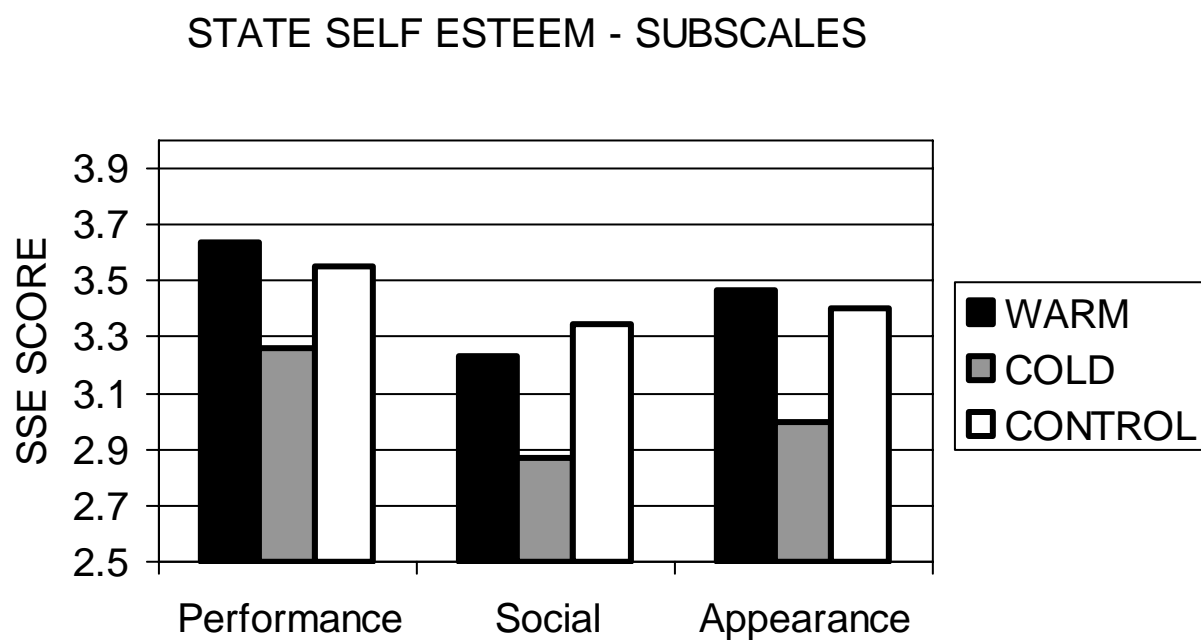




Figure 3.



## APPENDIX D

**Self Attributes Questionnaire – Pelham & Swann 1989****PART I**

This questionnaire has to do with your attitudes about some of your activities and abilities. For the items below, you should rate yourself relative to other college students your own age by using the following scale:

1	2	3	4	5	6	7	8	9	10
Much lower				Average					Much higher
than average									than average

\_\_\_\_\_ intellectual/academic ability  
 \_\_\_\_\_ social skills/social competence  
 \_\_\_\_\_ artistic and/or musical ability  
 \_\_\_\_\_ athletic ability  
 \_\_\_\_\_ leadership ability  
 \_\_\_\_\_ common sense  
 \_\_\_\_\_ emotional stability  
 \_\_\_\_\_ sense of humor  
 \_\_\_\_\_ discipline

**PART II**

Now rate how certain you are of your standing on each of the above traits (you may choose any letter):

1	2	3	4	5	6	7	8	9	10
not at all					Moderately				
Extremely									
certain				certain					certain

\_\_\_\_\_ intellectual/academic ability  
 \_\_\_\_\_ social skills/social competence  
 \_\_\_\_\_ artistic and/or musical ability  
 \_\_\_\_\_ athletic ability  
 \_\_\_\_\_ leadership ability  
 \_\_\_\_\_ common sense  
 \_\_\_\_\_ emotional stability  
 \_\_\_\_\_ sense of humor  
 \_\_\_\_\_ discipline

**PART III**

Now rate how personally important each of these domains is to you:

1	2	3	4	5	6	7	8	9	10
not at all				moderately				extremely	
important				important				important	
to me				to me				to me	

\_\_\_\_\_ intellectual/academic ability  
 \_\_\_\_\_ social skills/social competence  
 \_\_\_\_\_ artistic and/or musical ability  
 \_\_\_\_\_ athletic ability  
 \_\_\_\_\_ leadership ability  
 \_\_\_\_\_ common sense  
 \_\_\_\_\_ emotional stability  
 \_\_\_\_\_ sense of humor  
 \_\_\_\_\_ discipline

**PART IV**

Now rate how important each of these domains is to most people:

1	2	3	4	5	6	7	8	9	10
not at all				moderately				extremely	
important				important				important	
to most people				to most people				to most people	

\_\_\_\_\_ intellectual/academic ability  
 \_\_\_\_\_ social skills/social competence  
 \_\_\_\_\_ artistic and/or musical ability  
 \_\_\_\_\_ athletic ability  
 \_\_\_\_\_ leadership ability  
 \_\_\_\_\_ common sense  
 \_\_\_\_\_ emotional stability  
 \_\_\_\_\_ sense of humor  
 \_\_\_\_\_ discipline

**PART V**

Now rate yourself relative to your "ideal self"- the person you would be if you were exactly the way you would like to be:

1	2	3	4	5	6	7	8	9	10
very short				somewhat like				very much	
of my ideal				and somewhat unlike				like my	
self				my ideal self				ideal self	

- \_\_\_\_\_ intellectual/academic ability
- \_\_\_\_\_ social skills/social competence
- \_\_\_\_\_ artistic and/or musical ability
- \_\_\_\_\_ athletic ability
- \_\_\_\_\_ leadership ability
- \_\_\_\_\_ common sense
- \_\_\_\_\_ emotional stability
- \_\_\_\_\_ sense of humor
- \_\_\_\_\_ discipline

## APPENDIX E

**Self Doubt Subscale of the Subjective Overachievement Scale – Oleson  
Poehlmann, Yost, Lynch & Arkin 2000**

Listed below are statements that concern how you feel about yourself. Read each statement carefully, and then decide how much you agree with it. Place the appropriate number on the line next to the statement. Use the following scale:

- 1 = Disagree very much
- 2 = Disagree pretty much
- 3 = Disagree a little
- 4 = Agree a little
- 5 = Agree pretty much
- 6 = Agree very much

There are no “right” or “wrong” answers to these statements. Answer in the way that is right for you. Please be as truthful as possible; your answers will be kept confidential.

- \_\_\_\_ 10. When engaged in an important task, most of my thoughts turn to bad things that might happen (e.g., failing) than to good.
- \_\_\_\_ 11. For me, avoiding failure has a greater emotional impact (e.g., sense of relief) than the emotional impact of achieving success (e.g., joy, pride).
- \_\_\_\_ 12. More often than not I feel unsure of my abilities.
- \_\_\_\_ 13. I sometimes find myself wondering if I have the ability to succeed at important activities.
- \_\_\_\_ 14. I often wish that I felt more certain of my strengths and weaknesses.
- \_\_\_\_ 15. As I begin an important activity, I usually feel confident in my ability.
- \_\_\_\_ 16. Sometimes I feel that I don't know why I have succeeded at something.
- \_\_\_\_ 17. As I begin an important activity, I usually feel confident in the likely outcome.

## Appendix F

**State Self Esteem Scale – Heatherton and Polivy - 1991**

This is a questionnaire designed to measure what you are thinking at this moment. There is, of course, no right answer for any statement. The best answer is what you feel is true of yourself at this moment. Be sure to answer all of the items, even if you are not certain of the best answer. Again, answer these questions as they are true for you RIGHT NOW.

- 1 = not at all
- 2 = a little bit
- 3 = somewhat
- 4 = very much
- 5 = extremely

- \_\_\_ 1. I feel confident about my abilities.
- \_\_\_ 2. I am worried about whether I am regarded as a success or failure.
- \_\_\_ 3. I feel satisfied with the way my body looks right now.
- \_\_\_ 4. I feel frustrated or rattled about my performance.
- \_\_\_ 5. I feel that I am having trouble understanding things that I read.
- \_\_\_ 6. I feel that others respect and admire me.
- \_\_\_ 7. I am dissatisfied with my weight.
- \_\_\_ 8. I feel self-conscious.
- \_\_\_ 9. I feel as smart as others.
- \_\_\_ 10. I feel displeased with myself.
- \_\_\_ 11. I feel good about myself.
- \_\_\_ 12. I am pleased with my appearance right now.
- \_\_\_ 13. I am worried about what other people think of me.
- \_\_\_ 14. I feel confident that I understand things.
- \_\_\_ 15. I feel inferior to others at this moment.
- \_\_\_ 16. I feel unattractive.
- \_\_\_ 17. I feel concerned about the impression I am making.
- \_\_\_ 18. I feel that I have less scholastic ability right now than others.
- \_\_\_ 19. I feel like I'm not doing well.
- \_\_\_ 20. I am worried about looking foolish.

## Appendix G

**Self Concept Clarity Scale - Campbell, Trapnell, Heine, Katz, Lavalley, & Lehman****1996**

Please answer the questions below as accurately and as honestly as possible using the following scale.

1	2	3	4	5
Strongly Disagree				Strongly Agree

- \_\_\_\_\_ 1. My beliefs about myself often conflict with one another.
- \_\_\_\_\_ 2. On one day I might have one opinion of myself and on another day I might have a different opinion.
- \_\_\_\_\_ 3. I spend a lot of time wondering about what kind of person I really am.
- \_\_\_\_\_ 4. Sometimes I feel that I am not the person that I appear to be.
- \_\_\_\_\_ 5. When I think about the kind of person I have been in the past, I'm not sure what I was really like.
- \_\_\_\_\_ 6. I seldom experience conflict between the different aspects of my personality.
- \_\_\_\_\_ 7. Sometimes I think I know other people better than I know myself.
- \_\_\_\_\_ 8. My beliefs about myself seem to change very frequently.
- \_\_\_\_\_ 9. If I were asked to describe my personality, my description might end up being different from one day to another day.
- \_\_\_\_\_ 10. Even if I wanted to, I don't think I could tell someone what I'm really like.
- \_\_\_\_\_ 11. In general, I have a clear sense of who I am and what I am.
- \_\_\_\_\_ 12. It is often hard for me to make up my mind about things because I really don't know what I want.

## Appendix H

**Implicit Theories of Intelligence Questionnaire – Dweck 1988**

Listed below are statements that concern how you feel about yourself. Read each statement carefully, and then decide how much you agree with it. Place the appropriate number on the line next to the statement. Use the following scale:

- 1 = Strongly Agree
- 2 = Mostly Agree
- 3 = Agree Somewhat
- 4 = Disagree Somewhat
- 5 = Mostly Disagree
- 6 = Strongly Disagree

There are no “right” or “wrong” answers to these statements. Answer in the way that is right for you. Please be as truthful as possible; your answers will be kept confidential.

- \_\_\_\_ 1. You have a certain amount of intelligence and you really can't do much to change it.
- \_\_\_\_ 2. Your intelligence is something about you that you can't change very much.
- \_\_\_\_ 3. You can learn new things, but you can't really change your basic intelligence.